THE COVEY HEADQUARTERS

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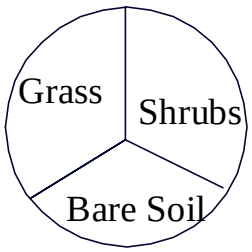
This newsletter is aimed at cooperators and sportspeople in Missouri to provide information on restoring quail. This is a joint effort of the Missouri Department of Conservation, USDA-Natural Resources Conservation Service, and University of Missouri Extension. If you would like to be removed from this mailing list or have suggestions for future articles please contact jeff.powelson@mdc.mo.gov or 816-232-6555 x122 or write to the address shown.



The name of this newsletter is taken from an old concept.....that a quail covey operates from a headquarters (shrubby cover). If the rest of the covey's habitat needs are nearby, a covey should be present. We are encouraging landowners to manage their quail habitat according to this concept. Use **shrubs** as the cornerstone for your quail management efforts. Manage for a **diverse grass, broadleaf weed and legume mixture and provide bare ground** with row crops, food plots or light disking **right next to** the shrubby area.

What Ever Happened To All the Timber Birds?

Bill White, Private Land Program Coordinator, Jefferson City, MO

While we frequently hear this question, our answer is the same as it is for quail in grass and crop areas: not enough bare ground, shrubs and food producing plants anymore.

Missouri's woodlands and forests have changed since the arrival of European settlers. Changes in land use, fire frequency and type, open range livestock grazing and other human impacts have changed the character and structure of Missouri's forests and woodlands. Before the settlement of Missouri, it is estimated that 70% of what is now dense tree growth was a mixture of savannas, glades and woodlands all with an abundant grass and wildflower understory. The average tree density then was 10-60 trees per acre. Today if you look at our forests you may see anywhere from 200-600 stems per acre. The lack of properly timed disturbance including fire or timber harvest on the landscape has created a shaded understory with a dense leaf layer. This suppresses seed producing plants and eliminates bare ground that quail require. It also keeps the oak species from producing new replacement trees and encourages shade loving hickories, elms, maples or cedars to take over, thus producing even more shade. Historically, the Missouri Ozarks woodlands on south and west facing slopes saw fire once every 3-11 years depending on the location. The woodland community on my farm in Osage County is typical of the poor condition of much of Missouri's oak woodlands. Dense shade, no young oaks, lots of shade loving trees and a thick layer of leaves. I wanted to get it suitable for quail and back to health. My first task was to knock down all the cedars in the forest understory. Most of these were less than 40 years old and averaged about 50 cedars per acre…….no sunlight EVER reached the forest floor in some locations. Now I can see to the other side of the woodland!!!

Next, I girdled all the trees that were not going to contribute to the health of the forest. I girdled all the trees that had been overtopped by the largest oaks and then the elms and honey locust. This amounts to about 35 trees per acre on average. I thinned the shagbark hickory down to about 10 trees per acre by girdling. I then thinned the oaks in areas where they were competing against each other for canopy space.

All told, I have knocked100 – 150 stems per acre out of my forest and I have somewhere between 50-120 stems per acre of good oak and hickory left with some dogwood and redbud in the understory. I also brought the quail

back to the timber…….real timber birds. Two coveys that become one before the winter ended stayed in a 10 acre patch of trees. They used a large area of gooseberry shrubs in the understory and the cedar piles in the woodland. Whenever the quail flushed they didn't fly far - a few feet, and then back under the gooseberry.

When the winter let up, I burned ½ of the woodland area, which removed the leaf layer and you should see the response of the wildflowers, legumes, and woodland grasses that came back. I did not burn the gooseberries so I could keep the covey headquarters. This fire knocked out much of the small elms and cedars, which are way too numerous to tackle with a chainsaw…..call me lazy!!!! The deer and songbirds have responded to the burn and the lush new vegetation.

Finally, we pulled or sprayed all of the invasive shrub honeysuckle. I plan to keep thinning the timber by picking on the hickories and crooked oaks. I will burn at least every few years to keep the leaf litter and baby cedars at a minimum. If I get some oak seedlings going I will need to back off the burning for a few years until they are big enough to tolerate fire. What I have done ensures the long-term health and sustainability of my oak woodland community and the presence of quail in the trees once again.

Consult with a forester or biologist to get the most from your timber stand improvement efforts. Improving your woodland may add a little money to your pocket and a return of the timber birds.

Did You Know???

Anyone planning to burn should have the training to do it safely. Contact your local Missouri Department of Conservation or Natural Resources Conservation Service office to learn about workshops and professional assistance to help you learn the safe way to conduct a prescribed burn. Several Soil and Water Conservation District offices have burn equipment for rent. Drip torches, rakes, flappers, water units, and many other items may be available. Burning before March 1 will promote wildflowers and set back thick native warm-season grasses to the benefit of quail.

Winter Covey Headquarters Calendar

December

Spray fescue and brome in fencelines if it is still green
Order shrubs from the George White Nursery – www.mdc.mo.gov and plant them on a 5x5ft. spacing
Edge feather forest edges, woody draws, and overgrown fencelines
Dormant seed native warm-season grasses and wildflowers

January

Burn native warm-season grass CRP through March 15
Interseed wildflowers and legumes in conjunction with your CRP mid-contract management practices
Visit with your local wildlife biologist and develop a quail plan for your farm

February

Continue your edge feathering and timber stand improvement projects
Time to enroll your low-yield field edges into a continuous CRP practice – visit your local FSA office for details
Use a front-end loader and transplant existing dogwood and plum thickets to new areas

Mark Your Calendar

Prescribed Burn Workshops

January 22, 2008, 6-9PM – University of Missouri-Extension office in Hillsboro. Call the Jefferson County Soil and Water Conservation District at 636-789-2441 ext. 3 to register.

February 21, 2008, 6-9PM – Lincoln County Extension office in Troy. Call 636-528-4877 ext. 3 to register.

Helpful Habitat Hints for Establishing Native Shrubs

Aaron P. Jeffries, Upland Game Coordinator, Jefferson City, MO

Protective shrubby cover is essential if you want to have good quail habitat. Generally, 10 to 20% of an area or field should be in good shrubby cover. That doesn't seem like a lot, but let's break it down for a 40 acre field. For a 40 acre field…

- 10% would be 4 acres or approximately 120 covey headquarters, each being 1,500ft in size (9,240 shrubs) or 5,808 linear feet of edge feathering (30 feet wide).

- 20% (even better for quail) would be 8 acres or 240 covey headquarters, each being 1,500ft in size (18,480 shrubs) or 11,616 linear feet of edge feathering (30 feet wide).

Think you might need to add some shrubby cover to your fields? If so, below are some helpful hints to consider when establishing covey headquarters or shrub rows to improve quail habitat on your property.

Site Preparation and Species:

- Native species are always best. Wild plum, aromatic sumac, roughleaf and gray dogwood, elderberry, blackberry and hazelnut are good native shrubs for covey headquarters.
- Plan ahead. Have each covey headquarters location marked. Spray the site with a nonselective herbicide in the fall to prepare for a spring planting.
- Research has shown that during the winter quail usually stay within 70 feet of woody cover. Covey headquarters should be planted out in the middle of fields and along woody draws for natural travel lanes.
- Look for existing native shrubs in the field. Work with what is already there by expanding on these 'natural' covey headquarters. If feasible, make these sites future covey headquarters by planting shrubs around small shrub thickets or letting these areas expand. Make sure to kill all grasses growing in and around the shrubs.
- Always go for instant shrubby cover first. Edge feather where feasible and then add covey headquarters or downed tree structures out in the field to fill in the gaps.
- Order your shrubs early. Don't wait until March or April to order shrubs as the species you want may be sold out.

Planting Time:

- When the bareroot seedlings arrive, check each bundle and water if the roots are dry. Store the bundles in a cool, moist place and keep them out of direct sunlight.
- When planting bareroot seedlings, keep the shrub in a cool, shaded area. When planting a covey headquarters, take only the shrubs you need and keep the roots moist. Don't leave the shrub in a bucket of water for more than two hours. Do not unwrap the remaining bundles or leave the roots exposed to the sun or drying wind. It is a good idea to use a wetting agent, such as terra-sorb, to keep the roots moist during planting.
- Make sure you plant the shrubs at the correct depth and the soil is packed down around each seedling.
- Generally you should plant shrubs on a 5x5 feet spacing in a covey headquarter.

Weed Control:

- Use a pre-emergent herbicide. Spray before or after planting the shrubs. Spray every spring for 3 to 5 years to reduce weed competition.
- Use selective herbicides such as Outrider, Poast, Fulisade and Select to control weeds during the growing season or to control certain weeds. For example, Poast and Select will only control grasses and will not harm the shrubs or broadleaf plants.
- Nonselective herbicides may be applied prior to bud break in March or early April. Do not spray shrubs with nonselective herbicides after bud break. **Read the label first!** Some herbicides can be absorbed through the bark of the shrubs.

5 Year Maintenance:

- Keep cool-season grasses in check. Use pre-emergent herbicides and/or spray with a nonselective herbicide before bud-break in the spring.
- Replant any shrubs that die after the first year.
- Hand collect seeds of shrub dogwoods, blackberry, sumac, wild plum or elderberry. Throw a couple handfuls of seed or fruit into each covey headquarters. It's cheap, easy to do, and it works.

If You Have Heavy Deer and Rodent Damage:

- Plant aromatic sumac, false indigo, elderberry, or blackberry.
- Sprays and repellents are generally ineffective or not feasible for large plantings.
- Mow around the plantings to help minimize rodent damage.
- Use shrub protectors – these are a must if you have rabbit habitat (brush piles) near your new planting.
- Harvest more does.

Slow Establishment:

- Nothing improves establishment more than good site preparation and weed control for the first 3 to 5 years.
- Consider planting a few container grown shrubs in each covey headquarters. Container shrubs are usually larger, easier to establish, and may provide adequate cover in less time.
- Create downed tree structures in each covey headquarters by simply dragging several large trees into the covey headquarters before you plant the shrubs. Do not push the trees into a dense pile. Just drag them and leave them. Then, plant shrubs around the downed trees. The downed tree structures will provide instant brushy cover.

Build it and they will come…

Tom and Greg Becker have owned their Gasconade County farm for over twenty years. Their primary purpose for owning this property is for recreation with family and friends. They are avid hunters and anglers. The farm is almost 340 acres with a mixture of fields and forest and a 20-acre lake.

Most of the open acres were in fescue that was hayed, but the soil fertility was not maintained. As a result, there were many remnant native plants present, particularly broomsedge and various forbs.

Tom and Greg liked having quail and other small game and realized that in order to improve habitat for small game they needed to eliminate the fescue. They wanted to do this on a fairly large scale relative to the amount of open land they had, but couldn't justify spending too much money.

Tom and Greg contacted MDC Private Land Conservationist John Knudsen to find out what they could do to improve their farm for quail. John recommended they eradicate the fescue with an herbicide and time the applications to minimize the negative effects on beneficial plants already in the fields. This was the cheapest alternative for them to reach their goal of re-establishing suitable habitat for quail and other small game.

In the spring of 2006, 65 acres was treated with glyphosate at the rate of 2 quarts/acre. This application was done twice. The double spring treatment was very effective at eliminating most of the fescue, and by mid-summer, the remnant broomsedge and forbs flourished. Tom and Greg decided to seed parts of the field that did not respond well with a mix of little bluestem, side-oats grama and native wildflowers. This was a dormant seeding in February 2007. This seeding will increase plant diversity even further and benefit quail.

The Becker's reported hearing quail on the part of the farm where the habitat work was completed. This year, they will plant food plots in each field and replant the every two years. They plan to provide suitable woody cover for quail by edge feathering around the field edges. They also want to create some downed tree structures in the middle of the field to expand the amount of good woody cover for quail.

The fescue eradication and seeding were both accomplished using MDC cost-share. The woody cover establishment and food plots are being done by the landowners without financial assistance. With guidance and a little cost share from the local Private Land Conservationist, the Becker brothers are well on their way to restoring bobwhite quail habitat on their Gasconade County farm. **John Knudsen, Private Land Conservationist, Owensville, MO**

Lying partially in Knox and Adair Counties in Northeast Missouri, *Wind Ridge Farm* is owned by Mrs. Carrol Pratte, and managed by a group of hunters with the purpose of enhancing wildlife. Since they started leasing the 680-acre property, Matt & Tom Marciano and Gene Sanders had been planting food plots on *Wind Ridge*, which is comprised of many acres of cool-season grass CRP, wooded draws, and shrubby old fields. Realizing that small game management would benefit many different species, they began to research what they could do

to “ramp it up a notch.” After Matt contacted the local MDC Private Land Conservationist, they began to lay out a management plan, using quail as the target species. Common themes of management were setting back perennial grasses, enhancing woody cover, and weeds, weeds, weeds.

After attending a burn workshop and getting a burn plan, they formulated a regime of breaking up large tracts of grass into burn compartments. They soon discovered that interlacing disced firebreaks throughout the farm provided much needed open ground for birds, and in some instances, watched quail dust in the disced lines after the tractor would pass. If burning in the spring, they burn as late in April as they can to set back the cool-season grass. To control locust and elm sprouts they burn in late summer. In areas where burning was not practical, they use herbicide and discing to create brood-rearing cover. They greatly enhanced the woody cover by edge feathering and strategically planting shrubs in wide-open spaces. Their food plots are usually sorghum, millet, or milo, and they let one half of their plots go fallow, while planting fresh grain in the other half.

What has been going on at *Wind Ridge* has been outstanding! In October of 2006 they began fall monitoring of calling coveys (details at http://mdc.mo.gov/landown/wild/quail/fallcount.htm or MDC’s *On the Edge* quail management booklet). Imagine their excitement when they could hear seven coveys from one listening post. When the group found the coveys, many coveys had over twenty birds going into the winter. When the cold weather hit, quail were found utilizing the heavy woody cover and sorghum plots. In the spring, adult quail and chicks can be seen running down the strips of broadleaves left from discing or herbicide. The managers of *Wind Ridge* have seen a noticeable increase in wildlife as a whole, from songbirds to deer.

As with all of us, the fellows at *Wind Ridge* are affected by factors, like weather, that they cannot control; however, what they have done through hard work is “set the table” for when things go well, and they are seeing results. **John Murphy, Private Land Conservationist, Kirksville, MO**

What can production farmers do for quail?

Much of the promotion of quail habitat management is aimed at landowners with recreation land or acreage enrolled in the Conservation Reserve Program. However, a row crop or livestock farmer can still manage for quail without reducing profit margins. This can be done by working the edges of your fields. Here are a few ideas –

*Spray brome/fescue in fencerows and odd areas, overseed with lespedeza.

*Cut elms, honey locust, and hedge in fencerows and wood draws to encourage shrubby growth, leave trees where they fall or windrow them parallel to the field edge, do not stack them into dense brushpiles.

*Signup for these Continuous CRP buffer practices – filterstrips, field borders, riparian buffers, and contour buffer strips. **Do not plant the buffers to fescue or brome.** Several of these practices are applicable on pasture ground with opportunities for alternative water for cattle.

*Fence your cattle out of woody draws, then edge feather and treat grass with herbicide.

*Quail nest along edges – delay haying the outside 30’ of your hay fields until after July 15.

*Reduce chemical rates on the outside rows of cropfields.

Cost share is available for most of these practices through Quail Unlimited, Pheasants Forever, Missouri Department of Conservation, and the United States Department of Agriculture.

Economic Analysis of Wildlife Habitat Buffers in CP33

Figure 1.

The conservation practice, CP-33, Habitat Buffers for Upland Birds, is a fairly recent addition to the list of options available through the USDA Conservation Reserve Program (CRP). The initiative is administered by the United States Department of Agriculture (USDA) Farm Service Agency. In Missouri, technical assistance is provided by the USDA-Natural Resources Conservation Service and the Missouri Department of Conservation. Missouri has a total CP-33 allocation of 32,600 acres, the third largest in the nation behind Kansas and Illinois. The program has rapidly gained interest since it was made available in 2005. The basic intent of the program is to establish habitat buffers around the edges of existing crop fields to provide cover for quail, pheasant, and other upland birds.

A popular application of the program has been to establish buffers along field margins where planted crops compete with existing timber and hedgerows. In most years, crop yields are dramatically reduced along tree lines, but the impact is weather dependent. Historically, a selling point of the program has been that yields are often low enough at the field edge that revenue is less than the cost of planting and harvesting those acres. Figure 1 shows an ear of corn grown along a CP33 buffer (on the left) compared to an ear of corn grown on the opposite side of a wooded fenceline with no buffer: same farmer, same corn variety, same inputs.

To analyze this concept, the Missouri Department of Conservation teamed with the Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri to complete a farm-level economic analysis of participation in CP-33. The study was conducted using FAPRI's well established representative farm analysis. The approach used real world yields, prices, operational costs, and soil rental rates within a sophisticated computer model. Farm-level economics, validated by a panel of participating farmers from Carroll County were modeled over 10-years, and projections of future commodity prices and operational costs were incorporated.

Results indicated that participation in CP-33 pays off in all the representative farm scenarios tested. The average increase in returns to family living ranged from 25 cents to $2.49 per acre of the farm per year, Figure 2. Government payments plus lower operating expenses exceed declines in market receipts and produced positive returns to family living over the ten years modeled. FAPRI cautions that these findings do not apply to all farms, but is most applicable where crop yields along field edges suffer from the effects of adjacent tree growth. **In these situations, whether corn is bringing $2 or $4 per bushel, CP33 pays**.

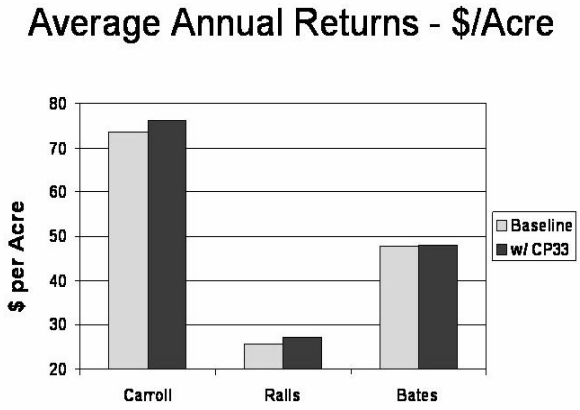


Figure 2.

The management alternative of complete tree removal along crop field edges with a bulldozer was also analyzed for the Carroll County farm. Higher returns to family living were produced from CP-33 participation than from the tree removal option.

Yields, commodity prices, operating costs, and soil rental rates were important factors affecting study results. Although net benefits were small and variable across farms, most producers should receive a positive economic return to idle acres by participating in CP- 33 even with strong commodity prices in the future. Recent increases in the CRP soil rental rates and additional incentives in the watersheds eligible for the Conservation Reserve Enhancement Program (CREP) and the Conservation Security Program (CSP) should provide additional positive returns to landowners. Buffers will lessen equipment damage caused by overhanging tree limbs, improve wildlife habitat, and provide more quail and songbird viewing opportunities for wildlife enthusiasts.

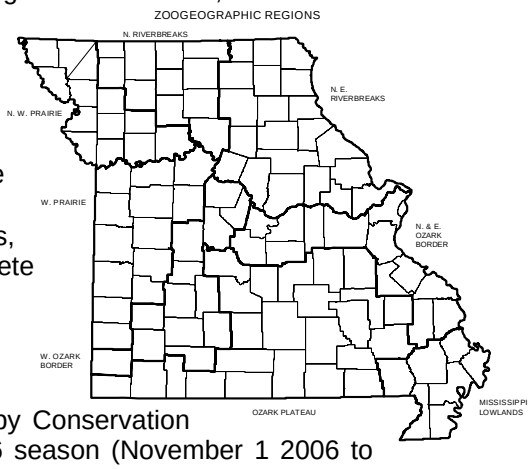
For more information about the FAPRI study visit: www.fapri.missouri.edu (August 21 story).

For more information about CP33 visit your local USDA service center or visit www.mdc.mo.gov/conmag/2006/01/30.htm

Upland Game Bird Hunting Prospects

Thomas V. Dailey, Resource Scientist, Columbia, MO

Missouri's upland game birds and hunters had a rough year in 2006-07. For hunters, opportunity was reduced by record warmth in November, heavy snowfall on December 1, and ice the last weekend of the season. The stronghold for quail hunting continued to be northern and western Missouri (see table below), and pheasant hunting was concentrated in the Northwestern Prairie and Northern Riverbreaks. Quail and pheasants encountered weather conditions that could have reduced over-winter survival and summer production including major ice or snow storms on January 13, 21 and 31, and February 13, drought in some areas, and record rainfall in other areas.



On a statewide basis, quail and pheasant counts were down from last year (table below). The quail index was up from 2006, however, in 5 of 8 regions. Large increases occurred in the Northern Riverbreaks, Ozark Plateau and Mississippi Lowlands, and small improvements occurred in the Northwestern Prairie and Western Prairie. Both quail and pheasant counts were down considerably in the Northeastern Riverbreaks. For both species, hunting prospects are best in north central and northwest Missouri. Complete status reports for each species are available at http://www.mdc.mo.gov/hunt/gamebird/ or by calling 573-882-9880.

Average number of quail and pheasants counted along 30-mile routes by Conservation Agents during August 1-15, 2007. Quail and pheasant harvest for 2006 season (November 1 2006 to January 15 2007) in each zoogeographic region from post-season mail survey of randomly chosen small game hunters. For pheasants, regions without data are not open to hunting, or harvest was dominated by shooting-preserve birds.

	QUAIL			PHEASANTS		
Zoogeographic Region	**2007 Count**	**2006 Count**	**2006 Harvest**	**2007 Count**	**2006 Count**	**2006 Harvest**
N.W. Prairie	5.73	5.36	38,467	1.63	4.05	11,845
N. Riverbreaks	5.20	3.27	38,745	1.42	0.62	9,309
N.E. Riverbreaks	3.26	6.40	95,354	1.00	1.75	4,734
W. Prairie	3.25	3.17	54,066			
W. Ozark Border	2.85	3.38	25,161			
Ozark Plateau	2.92	2.38	6,284			
N. & E. Ozark Border	1.92	3.33	13,815			
Mississippi Lowlands	1.43	0.43	5,946	0.33	0.00	0.00
Total for regions	3.30	3.68	277,838	1.19	1.88	25,888

The low statewide quail index reflects Missouri's widespread poor quail habitat. The list of problems is long and includes over-grazed pastures, overly thick stands of grass in old fields and Conservation Reserve Program fields, natural replacement of woody thickets by large canopied trees, replacement of woody draws by grass waterways, removal of hedgerows, red cedars infesting grasslands and monocultures of crops, grains and forage. There are programs to remedy these problems, including the MDC quail plan, the Northern Bobwhite Conservation Initiative, mid-contract management in the USDA Conservation Reserve Program (CRP), CP33 buffers, and habitat-management organizations such as Quail Unlimited and Pheasants/Quail Forever. Contact your local MDC office for details.

CRP NEWS

CRP rental rates have increased. Some rates went up $20 per acre and are effective for any new contracts. In all likelihood, there will not be a general CRP signup in 2008 or 2009. However, there are still many Continuous Conservation Reserve Program (CCRP) practices available. Under CCRP, there is no competition, no ranking your conservation plan - simply sign up today at your local Farm Service Agency (FSA) office. However, your land and plan will need to meet specific requirements for program eligibility. For example, cropland must have been farmed 4 out of 6 years from 1996 to 2001. Some CCRP practices are eligible on pastureland with opportunities for fencing cattle out of streams and ponds. Opportunities may also exist for alternative water sources for livestock. **Most practices offer tremendous wildlife benefits if the proper grass species are selected**. One popular practice is the CP33 bobwhite buffer practice. Missouri has enrolled over 23,000 acres into this program. The Conservation Reserve Enhancement Program (CREP) is another offering from FSA containing several CRP practices that can be signed up for at any time. The CREP program offers increased incentives and is available in specific watersheds. To see if your farm falls within one of these watersheds, visit your local FSA office. A new CCRP practice, CP38, should be available early 2008. We'll get the details on this new practice to you in the next issue.

UNIVERSITY OF MISSOURI Extension

NRCS Natural Resources Conservation Service

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